

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a phosphor layer disposed adjacent said inner surface of said glass envelope, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, and a
5 mercury barrier, said glass envelope comprising an annular mercury-insulating section located adjacent and including said inner surface thereof and extending to a radial depth within said glass envelope measured from said inner surface, said annular mercury -insulating section ~~barrier~~ being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms
10 therein, ~~wherein said mercury barrier is substantially non-mercury absorptive.~~

Claim 2 (original): A lamp according to claim 1, said glass envelope being made from soda-lime glass.

Claim 3 (currently amended): A lamp according to claim 1, said mercury-
insulating section of said glass envelope ~~barrier~~ comprising a material selected from the group consisting of non-sodium metal ions, non-sodium metal atoms, semi-metallic ions, semi-metallic atoms, ~~potassium atoms, potassium ions, calcium atoms,~~

5 ~~calcium ions, SnO_2 , and mixtures thereof.~~

Claim 4 (currently amended): A lamp according to claim 1, said mercury
barrier being a mercury-insulating section of said glass envelope comprising a
material selected from the group consisting of potassium atoms, potassium ions,
calcium atoms and calcium ions, ~~said mercury-insulating section extending radially~~
5 ~~outward from said inner surface of said glass envelope.~~

Claim 5 (currently amended): A lamp according to claim 4, 1, ~~wherein said~~
~~mercury-insulating section has a~~ said radial depth of said mercury-insulating
section being of at least 10 μm measured from said inner surface of said glass
envelope.

Claim 6 (currently amended): A lamp according to claim 4, 1, ~~wherein said~~
~~mercury-insulating section has a~~ said radial depth of said mercury-insulating section
being 25-100 μm measured from said inner surface of said glass envelope.

Claim 7 (currently amended): A lamp according to claim 4, 1, wherein said
mercury-insulating section is a compressional section ~~of~~ comprising densely packed
species, and wherein said densely packed species does not substantially complex,
react, or amalgamate with said mercury vapor inside said envelope.

Claim 8 (currently amended): A lamp according to claim ~~4~~, 1, wherein said mercury-insulating section is substantially transmissive of visible light.

Claim 9 (original): A lamp according to claim 7, wherein said densely packed species is selected from the group consisting of potassium atoms and potassium ions.

Claim 10 (original): A lamp according to claim 7, wherein said densely packed species is selected from the group consisting of calcium atoms and calcium ions.

Claim 11 (currently amended): A lamp according to claim ~~4~~ 1, wherein said mercury-insulating section of said glass envelope is substantially electrically non-conductive.

Claim 12 (original): A lamp according to claim 1, said lamp exhibiting fewer than 30 degrees of discoloration at 2000 hours of cyclical operation.

Claim 13 (original): A lamp according to claim 1, said lamp exhibiting fewer than 30 degrees of discoloration at 3000 hours of cyclical operation.

Claim 14 (original): A lamp according to claim 1, said lamp having a lumen

efficiency of at least 54 lumens/watt at 2000 hours cyclical operation.

Claim 15 (original): A lamp according to claim 1, said lamp having a lumen efficiency of at least 54 lumens/watt at 3000 hours of cyclical operation.

Claim 16 (original): A lamp according to claim 1, said lamp having a lumen maintenance of at least 0.88 at 2000 hours of cyclical operation.

Claim 17 (original): A lamp according to claim 1, said lamp having a lumen maintenance of at least 0.88 at 3000 hours of cyclical operation.

Claim 18 (currently amended): A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, A lamp according to claim 1, said mercury barrier being a phosphor layer disposed adjacent said inner surface of said glass envelope, a mercury barrier layer disposed adjacent said phosphor layer, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said mercury barrier layer comprising a material selected from the group consisting of potassium salts, non-sodium metal ions, non-sodium metal atoms, semi-metallic ions, and semi-metallic atoms, said mercury barrier layer being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms therein.

Claim 19 (currently amended): A lamp according to claim 18, said mercury barrier layer ~~being a potassium-containing layer having~~ comprising at least 0.5 weight percent potassium.

Claim 20 (original): A lamp according to claim 19, said mercury barrier layer being 10-100 nm thick.

Claim 21 (canceled).

Claim 22 (currently amended): A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a mercury barrier layer disposed adjacent said inner surface of said glass envelope, a phosphor layer disposed adjacent said mercury barrier layer, and a discharge-
5 sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said mercury barrier layer ~~A lamp according to claim 21, said tin oxide barrier layer being~~ a compressional layer of densely packed non-activated and substantially electrically non-conductive tin oxide.

Claim 23 (currently amended): A lamp according to claim ~~24~~22, said tin oxide barrier layer being 5-200 nanometers thick.

Claim 24 (currently amended): A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a phosphor layer disposed adjacent said inner surface of said glass envelope, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope. A
5 ~~lamp according to claim 1,~~ said phosphor layer comprising a at least one non-sodium metal ion species to provide a mercury barrier therein, said mercury barrier of said phosphor layer being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms thereintherein as said mercury barrier.

Claim 25 (original): A lamp according to claim 24, wherein said metal ion species is selected from the group consisting of potassium species, calcium species, and mixtures thereof.

Claim 26 (original): A lamp according to claim 24, wherein said metal ion species is a potassium salt selected from the group consisting of potassium chloride, potassium nitrate, potassium borate, and mixtures thereof.

Claim 27 (original): A lamp according to claim 1, said lamp being a high wattage fluorescent lamp and having a lumen maintenance of at least 0.6 at 2000 hours of cyclical operation.

Claim 28 (original): A lamp according to claim 1, said lamp being a high wattage fluorescent lamp and having a lumen maintenance of at least 0.6 at 3000 hours of cyclical operation.

Claim 29 (new): A lamp according to claim 18, said mercury barrier layer being a potassium salt barrier layer.